

May 24, 2004

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Subject: Floor Inside Building 147 Within Investigation Area C1 on the Eastern Early

Transfer Parcel of Mare Island Where No Further Action is Required under the

Department of Toxic Substances Control Consent Agreement

Dear Mr. Chui:

CH2M HILL prepared this letter in compliance with the requirements in the Consent Agreement (LMI et al. 2001) signed April 16, 2001 between Lennar Mare Island (LMI), the City of Vallejo, and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) and according to the *Final Polychlorinated Biphenyl Work Plan* (CH2M HILL 2003a).

The purpose of this letter is to obtain DTSC concurrence that a no further action (NFA) determination is appropriate with respect to polychlorinated biphenyl (PCB) contamination as part of the overall regulatory closure process for the ground floor of Building 147 on the LMI property of Mare Island. An NFA determination is appropriate because a cleanup action was performed by the Navy, there is no known release of PCBs to soil or groundwater, and no visible pathway for migration to soil or groundwater from the site.

PCB Site Identification

From visual site surveys, as well as from review of historical records, building closure reports, and databases of electrical equipment, the Navy identified PCB sites where PCB-containing equipment was located, where PCB spills were documented, or where contamination was suspected because of building history or visible stains (TtEMI 1998). Navy personnel from Supervisor of Shipbuilding, Conversion and Repair, Portsmouth, Virginia, Environmental Detachment (SSPORTS) conducted interim PCB assessments and performed cleanup actions (i.e., washing, scabbling) in accordance with Technical Work Documents (TWDs), where necessary. Following the SSPORTS interim PCB assessments and any cleanup actions, Tetra Tech Environmental Management, Inc. (TtEMI) personnel collected confirmation samples either to confirm SSPORTS findings that no cleanup was necessary or to determine the effectiveness of the SSPORTS cleanup actions.

Building 147 is a 7,500-square-foot building constructed in 1901. This building was a coal shed and storage facility. It is located near Mare Island Strait, east of Nimitz Avenue (formerly California Avenue) and north of 4th Street. According to the *Preliminary Land Use Plan*,

Building 147 is located within an area designated as mixed-use (LMI 2000). Building 147 is located within Investigation Area (IA) C1. Figure 1 shows the PCB site locations within IA C1.

Two PCB sites associated with Building 147 are listed in the Consent Agreement for the Eastern Early Transfer Parcel at Mare Island (LMI et al. 2001): Assessment Location (AL)#01 and AL#02. This letter addresses Building 147 AL#01—the first level floor inside the building. Building 147 AL#02 (second level floor) was addressed in a separate submittal to DTSC dated May 2, 2003 requesting an NFA determination (CH2M HILL 2003b). DTSC approved the NFA determination for Building 147 AL#02 in a letter dated August 6, 2003 (DTSC 2003).

Documentation of the Navy PCB site assessment sampling, cleanup actions, and confirmation sampling for the Building 147 PCB sites is contained in the *Final Basewide Polychlorinated Biphenyl Confirmation Sampling Report* (TtEMI 1998) in the section for parcel 03-K2. The PCB site closure process and the Building 147 AL#01 previous sampling and cleanup are discussed in detail below.

PCB Site Closure Process

The Final Polychlorinated Biphenyl Work Plan (CH2M HILL 2003a) illustrates the process for PCB site closure under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Toxic Substances Control Act (TSCA). Under CERCLA, NFA is appropriate at a PCB site if there is no potential source and no PCB contamination present at the site (CH2M HILL 2003a). Even if there is a potential source or PCB contamination present in machinery or building materials, NFA under CERCLA is appropriate at a site if there is no release of PCBs to soil or groundwater, nor any visible pathway for migration of PCBs to soil and/or groundwater (CH2M HILL 2003a). If there is a known release to soil or groundwater, then NFA is also appropriate if the detected PCB concentrations in soil and groundwater do not exceed the applicable preliminary remediation goal (PRG), or results of a site-specific risk evaluation demonstrate that potential risks associated with exposure to residual PCBs are below the risk level generally used to determine if cleanup is necessary. NFA under TSCA is appropriate at sites where the maximum remaining PCB concentration is less than or equal to 1 milligram per kilogram (mg/kg) or 10 micrograms per 100 square centimeters (µg/100 cm²) (CH2M HILL 2003a). In compliance with this process, Figure 2 provides a flowchart illustrating the PCB site closure process, with the path for Building 147 AL#01 is highlighted.

Site Investigations/Cleanup Actions

Table 1 provides a summary of the previous sampling at Building 147 AL#01. This table includes the sample numbers, matrix, sample dates, and total PCB concentrations (the laboratory reporting limit is given when PCBs were not detected). Attachment A provides figures from the previous site investigations at Building 147 AL#01.

As part of the interim assessment at Building 147 in July 1996, SSPORTS personnel collected stain-specific floor samples from 13 concrete locations and 29 tile locations (SSPORTS 1996a). PCBs were detected at a concentration greater than laboratory reporting limits at only two of

the wipe sample locations. One of the stain-specific wipe samples had a PCB concentration greater than of $10~\mu g/100~cm^2$; this sample was a wipe of the concrete floor near the northwest corner of the building and had a PCB concentration of $34~\mu g/100~cm^2$ (SSPORTS 1996a). PCBs were detected in one concrete chip sample during the interim assessment with a concentration of 2~mg/kg (SSPORTS 1996a).

SSPORTS issued TWD 96-1365 on October 22, 1996 to decontaminate the painted concrete floor in an 8-foot by 11-foot area around the location where PCBs were detected at $34 \,\mu g/100 \,cm^2$ (SSPORTS 1996b). Decontamination of this concrete floor was addressed by washing and rinsing three times with an industrial strength detergent or non-ionic surfactant solution (SSPORTS 1996b). After decontamination, four equally-spaced wipe samples were collected on October 26, 1996 from the washed floor area. PCBs were not detected above the laboratory reporting limit of $5 \,\mu g/100 \,cm^2$ in these four verification samples (SSPORTS 1996b).

TtEMI personnel collected nine confirmation samples at Building 147 AL#01 on July 9, 1997: two asphalt sample locations and one concrete sample location were from stained areas on the floor not near equipment; four locations were concrete samples from floor stains near heavy equipment; and two tile samples were from stained areas where equipment had been removed (TtEMI 1998). PCBs were detected in the asphalt and concrete confirmation samples with total PCB concentrations (estimated) ranging from 0.1 to 2.3 mg/kg (Table 1; TtEMI 1998). Based on these results, the Navy considered PCB assessment and cleanup actions complete at Building 147 AL#01 (SSPORTS 1996a; TtEMI 1998).

Conclusions

Fifty-five samples were collected inside Building 147 for PCB analysis. The one location where PCBs were detected at a concentration greater than $10 \,\mu g/100 \,cm^2$ was previously remediated by the Navy (SSPORTS 1996a). PCBs were not detected above the laboratory reporting limit of is $5 \,\mu g/100 \,cm^2$ in four verification samples following the cleanup action of the concrete floor at Building 147 AL#01. In addition, PCBs were not detected above the laboratory reporting limit of $5 \,\mu g/100 \,cm^2$ in 39 floor wipe samples (stain-specific locations) collected during the interim assessment at Building 147 AL#01 (SSPORTS 1996b).

The maximum remaining PCB concentration in a stain-specific floor wipe sample location in an area not subject to the Navy cleanup action is $6.1\,\mu g/100\,cm^2$. The maximum remaining PCB concentration in a stain-specific floor chip sample location in an area not subject to the Navy cleanup action is an estimated concentration of $2.3\,m g/kg$. Three of the eight stain-specific floor chip samples at Building 147 AL#01 had PCB concentrations greater than $1\,m g/kg$ (one interim assessment sample during July 1996 and two confirmation samples during July 1997) (Table 1). Remaining PCB contamination inside Building 147 is limited to these three stain-specific locations (Attachment A).

The average remaining total PCB concentrations at Building 147 AL#01 (using half of the laboratory reporting limit when PCBs were not detected) are 0.98 mg/kg and 2.6 μ g/100 cm². In some of the samples, two PCBs (Aroclor-1254 and Aroclor-1260) were detected (Table 1). The

average remaining PCB concentration is 0.75 mg/kg for Aroclor-1254 and is 0.24 mg/kg for Aroclor-1260. The Aroclor-1260 average may be biased high because of the one non-detect sample included in the data set (sample 6184-0190). The proxy value used for the non-detect (one-half the laboratory reporting limit = 0.5 mg/kg) is greater than the detected results for the other samples in the data set (Table 1).

The exposure point concentration (EPC) (95-percent upper confidence limit for the mean) is 1.7 mg/kg for Aroclor-1254 and 0.37 mg/kg for Aroclor-1260 using the bootstrap t methodology (USEPA 2003). The EPC for total PCB concentrations at Building 147 AL#01 is 2.08 mg/kg. Based on these values, the estimated potential cumulative risk for PCBs in an industrial setting at Building 147 AL#01 is 3×10^{-6} (EPC for total PCBs divided by the PRG for cancer effects times $10^{-6} = [2.08/0.74] \times 10^{-6}$), and the hazard index is less than 1 (EPC for Aroclor-1254 divided by the PRG for non-cancer effects = 1.7/11 = 0.15).

This methodology for estimating potential risks associated with exposure to PCBs in concrete most likely results in an overestimate of potential risks. The PRG used for comparison is based on soil exposure and includes the inhalation, dermal contact, and ingestion exposure routes. For each one of these routes, the exposure assumptions for intake of PCBs in soil probably overestimate intake of PCBs in concrete for the following reasons:

- 1. Inhalation fine particles containing PCBs are not as readily available for re-suspension from concrete as from soil.
- 2. Dermal Contact PCBs in concrete are located on floors where regular dermal contact is not anticipated; fine concrete particles are not as available as fine soil particles for adherence to skin resulting in dermal absorption; fine particles of concrete are less likely to adhere to skin as soil particles.
- 3. Ingestion fine particles are not as available from concrete as soil for hand to mouth contact resulting in incidental ingestion of PCBs.

These site-specific risk evaluation results demonstrate that potential risks associated with exposure to residual PCBs at Building 147 AL#01 are at the lower end of the risk-management range generally used to determine if additional cleanup is necessary (1 x 10⁻⁴ to 1 x 10⁻⁶). In addition, the hazard index is less than 1. Based on the risk evaluation results and the conservative nature of the assumptions used in the risk calculations for this building floor, no further PCB cleanup activities are necessary at Building 147 AL#01. In addition, there is no known release of PCBs to soil or groundwater and no visible pathway for migration of PCBs to soil or groundwater at Building 147 AL#01 because of the presence of the intact concrete floor throughout the building. Therefore, the conditions for DTSC closure of PCB sites have been met for this site (Figure 2). An NFA determination under CERCLA would be protective of human health and the environment at Building 147 AL#01 with recordation of a land-use covenant prohibiting unrestricted land uses for IA C1. Consequently, we are requesting that DTSC issue an NFA determination for Building 147 AL#01 under CERCLA.

Please respond to this letter with confirmation that, in accordance with the approved *Final Polychlorinated Biphenyl Work Plan* (CH2M HILL 2003a), NFA under CERCLA is appropriate for Building 147 AL#01. Please submit your approval of NFA at this site to me at the above address or via e-mail at jmorris1@ch2m.com. If you have any questions regarding the site addressed in this letter, please contact Carla Duncan at 775/329-7238, extension 220.

References

CH2M HILL. 2003a. Final Polychlorinated Biphenyl Work Plan. March 7.

______. 2003b. Letter. "Sites in the Eastern Early Transfer Parcel of Mare Island Where No Further Action is Required under the Department of Toxic Substances Control Consent Agreement." May 2.

Department of Toxic Substances Control (DTSC). 2003. Letter. "Lennar Mare Island, Request for No Further Action Determination of Suspect Polychlorinated Biphenyl (PCB) Sites, Dated May 2, 2003." August 6.

Lennar Mare Island (LMI). 2000. Preliminary Land Use Plan. May 23.

Lennar Mare Island, the City of Vallejo, and the State of California, Environmental Protection Agency Department of Toxic Substances Control. 2001. Consent Agreement between Lennar Mare Island, the City of Vallejo, and the State of California, California Environmental Protection Agency Department of Toxic Substances Control. April 16.

Supervisor of Shipbuilding, Conversion, and Repair, Portsmouth, Virginia, Environmental Detachment (SSPORTS). 1996a. *PCB Assessment for Property Leasing Conditions of Parcel 03-K2 Property*. August 21.

. 1996b. PCB Decontamination Technical Work Document (TWD). PCB-Contaminated Spill Site, Building. 147 Concrete Floor Stain Decontamination. TWD No. 96-1365. Bldg No. 147. October 22.

Tetra Tech Environmental Management, Inc. (TtEMI). 1998. Final Basewide Polychlorinated Biphenyl Confirmation Sampling Summary Report. February 13.

United States Environmental Protection Agency (USEPA). 2003. ProUCL User's Guide. February.

Sincerely,

CH2M HILL

for Jeffery C. Morris, PE

RDD/041450007 (NLH2646.doc)

Enclosures: Table 1, Figures 1 and 2, Attachment A

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TABLE 1 Sample Results For Building 147 AL#01 PCB Sites, Lennar Mare Island, Vallejo, California

PCB Site Name Building 147 AL#01

	Comments	Aroclor-1254									Aroclor-1254 (2 mg/kg); Aroclor-1260 (ND, < 1 mg/kg)			Aroclor-1254; removed per TWD 96- 1365																
-	Units	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	μg/100 cm²	μg/100 cm²	mg/kg	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 cm²	µg/100 ст²	µg/100 cm²	µg/100 cm²	μg/100 cm²	μg/100 cm²	$\mu g/100~cm^2$	μg/100 cm ²	μg/100 cm²	µg/100 ст²	µg/100 ст²	μg/100 cm²	µg/100 cm²	µg/100 cm²
Total	PCB Concentration	6.1	ND (< 5)	2.0	ND (< 5)	ND (< 5)	34	ND (< 5)	ND (< 5)	ND (< 5)	ND (< 5)	ND (< 5)	ND (< 5)	ND (< 5)	ND (< 5)															
Sample	Date	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96	07/19/96
Sample	Matrix *	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Tile	Tile	Tile	Tile	Tile	Tile	Tile	Tile								
	Sample Number	6184-0046	6184-0047	6184-0048	6184-0049	6184-0050	6184-0051	6184-0052	6184-0053	6184-0054	6184-0190	6191-0298	6191-0299	6191-0300	6191-0301	6191-0302	6191-0303	6191-0304	6191-0305	6191-0306	6191-0379	6191-0380	6191-0381	6191-0382	6191-0383	6191-0384	6191-0385	6191-0386	6191-0387	6191-0388
	Site Description	Concrete Floor																												

TABLE 1 Sample Results For Building 147 AL#01 PCB Sites, Lennar Mare Island, Vallejo, California

PCB Site Name

Sample Matrix *
Tile 07/19/96
Tile 10/24/96
Tile 10/24/96
Tile 10/24/96
Tile 10/24/96
Asphalt 07/09/97
Asphalt 07/09/97
Concrete 07/09/97
Tile 07/09/97
Tile 07/09/97
Concrete 07/09/97
Concrete 07/09/97

TABLE 1

Sample Results For Building 147 AL#01 PCB Sites, Lennar Mare Island, Vallejo, California

	Comments	Aroclor-1254 (0.91 mg/kg); Aroclor-1260 (0.28 J mg/kg)	Aroclor-1254 (0.46 mg/kg); Aroclor-1260 (0.35 J mg/kg)
	Units	mg/kg	mg/kg
Total	PCB Concentration	1.2 J	0.81 J
Sample	Date	76/60/70	07/09/97
Sample	Matrix *	Concrete	Concrete
	Sample Number	PC1088	PC1089
	Site Description Sample Numi		
	PCB Site Name		

Notes:

Sample numbers beginning with PC were collected by TtEMI. All other samples were collected by SSPORTS.

AL = Assessment Location.

J = estimated concentration.

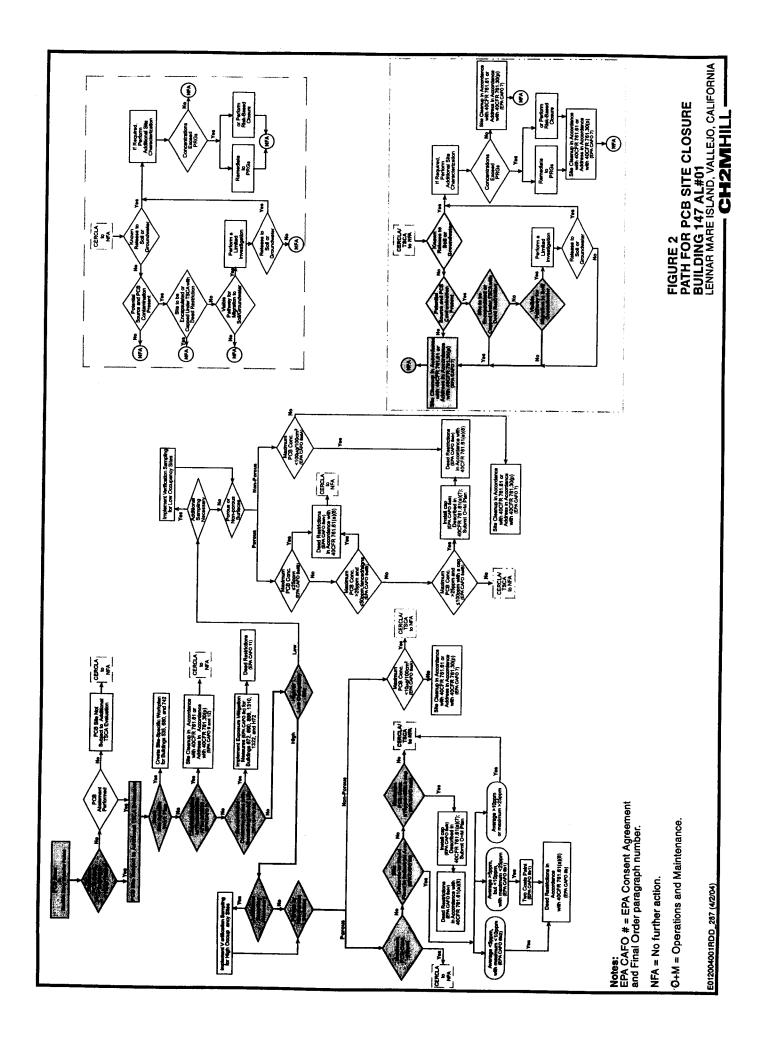
mg/kg = milligrams per kilogram.

ND = not detected (laboratory reporting limit).

PCB = polychlorinated biphenyl.

TWD = Technical Work Document.

μg/100 cm² = micrograms per 100 square centimeters.

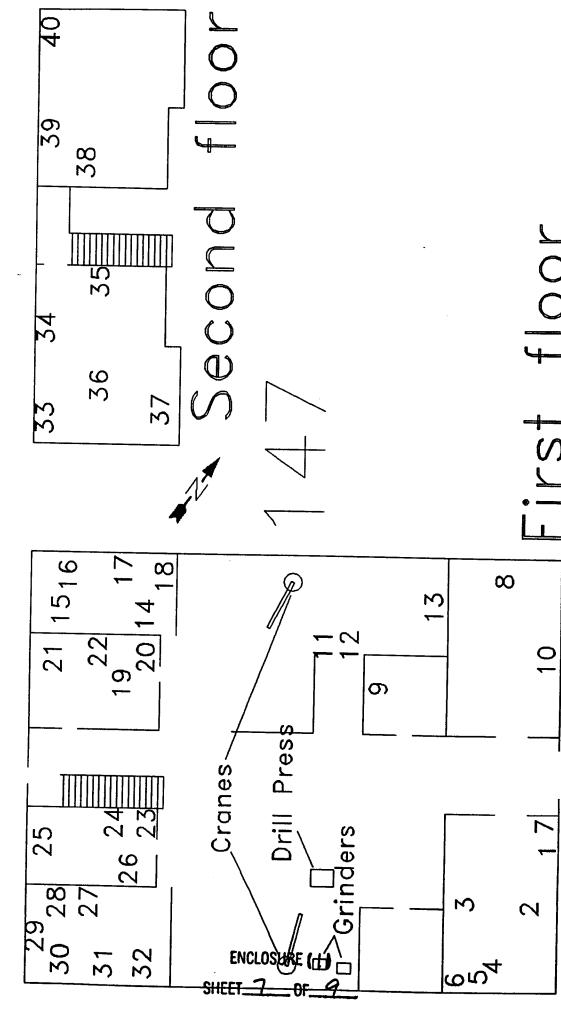




4th STREET

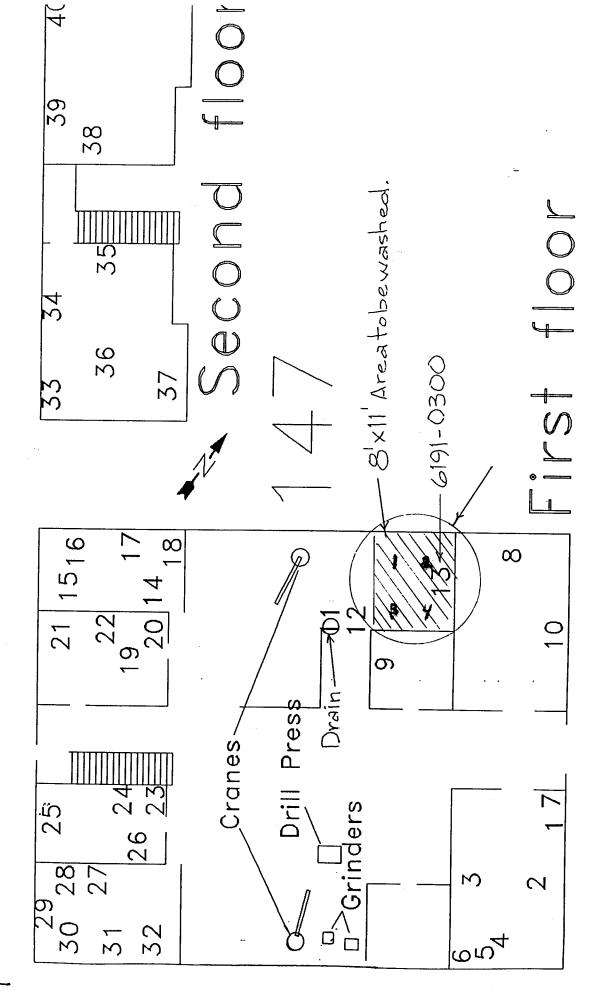
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KEY TO SAMPLE NUMBERS FOR PARCEL 03-K2

BUI	LDING 147
1	6184-0046
2	6184-0047
3	6184-0048
4	6184-0049
5	6184-0050
6	6184-0051
7	6184-0052
8	6184-0053
9	6184-0054
10	6184-0190
11	6191-0298
12	6191-0299
13	6191-0300
14	6191-0301
15	6191-0302
16	6191-0303
17	6191-0304
18	6191-0305
19	6191-0379
20	6191-0380
21	6191-0381
22	6191-0382
23	6191-0383
24	6191-0384
25	6191-0385
26	6191-0386
27	6191-0387
28	6191-0388
· 29	6191-0389
30	6191-0390
31	6191-0391
32	6191-0392
33	6191-0393
34	6191-0394
35	6191-0395
36	6191-0396
37	6191-0370
38	6191-0371
39	6191-0372
40	6191-0373
41	6197-0019
42	6197-0020
43	6197-0021



ENCLOSURE (1)
SHEET 2 OF 3

